Facial Urns" (*Gesichts-urnen*), which has been printed separately. Funereal urns, containing bones and ashes, have long been known, in museums, from Egypt and Etruria, the lids of which, generally of stone, were fashioned into the shape of a human head, or that of some other animal. The human heads, if not portraits, are supposed to have at least indicated the condition of the deceased. In the course of the last forty years facial urns have been discovered in mounds in various parts of Germany, mostly near the Roman settlements on the Rhine, but more recently in the neighbourhood of the watering-place Zoppot in Pomerania, but confined to a very circumscribed district, and exhibiting, according to Dr. Virchow, points of marked difference from those found in Rhenish Prussia. Many of these have well-developed human faces, others have rough drawings of animals, sometimes difficult to make out, scratched upon them. Similar urns are described as having been found in Mexico and Peru; but Dr. Virchow believes that the peculiar contour and form of ornamentation of these North German urns indicate an Etrurian origin, and possibly point to a colonising of the Baltic from Italy.

AT the last meeting of the Scientific Committee of the Horticultural Society, the Rev. M. J. Berkeley exhibited some specimens of the female form of *Lychnis diurna*, in which the flowers were infested with smut, and the stamens, usually abortive, were developed. Mr. Berkeley believes that "the *Ustilago* penetrates the plant, but as it can only fructify in the stamens, it would appear to be the determining cause of the production of those organs in the normally female flower." It is laid down as a rule in Mr. Darwin's works that no change can take place in a species through the agency of Natural Selection unless the change is for the benefit of the species. It is difficult to see how the abnormal production of stamens for the purpose of finding a home for the smut can benefit the *Lychnis;* and it would be interesting to know whether vegetable physiologists generally will sanction the idea of such a power in the plant to develope organs which assist in its own destruction.

WE have received a letter from Mr. Walenn pointing out that in our report of the meeting of the Chemical Society on May 19, we have omitted to mention that the calico-printing roller which was exhibited was immersed for some days in a bath containing sulphuric acid and cupric sulphate, then coated with brass in an alkaline liquid, and finally coated with copper in an acid bath. A deposit, $\frac{3}{16}$ of an inch thick, weighing 29 lbs., and of compact copper, was thus produced.

THE *Chemical News* describes a new method of heating stoneware vessels, and of obtaining regulated high temperatures, which will be of considerable importance in conducting chemical and pharmaceutical operations for manufacturing purposes. By this new method, which has been patented by Mr. J. A. Coffey, the pharmaceutical engineer, any temperature ranging from 100° to 700° F. can be safely and easily obtained. The principle is to cause heavy paraffin oil to circulate, first through a coil of pipes in a furnace, and then through the jackets of the pans. It moves by its own convection. As contrasted with steam-heat, the inventor claims for his process a saving of 30 per cent. in fuel, the large amount of heat necessary to convert water at 212° F. into steam at 212° being economised.

"THE Autotype Process: being a practical manual of instruction in the art of printing in carbon or other permanent pigment," is a handsomely-printed pamphlet of 48 pp., very clearly written, and describing all the modern improvements in the process, which are considerable. It is divided into five parts, which treat of the nature and history of carbon printing, its general practice, its special practice for non-inverted pictures, its special practice for inverted pictures, and concluding observations

ETHNOLOGY

The Meenas of Central India

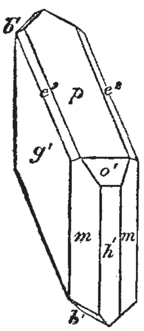
LIEUT-COL. C. L. SHOWERS has communicated to the Proceedings of the Asiatic Society of Bengal, a paper upon the Meenas, a wild tribe of Central India. Lieut.-Col. Showers says, that when the Meenas first fell under his observation in the year 1854, they were in a condition of entire lawlessness. Emboldened by long impunity they carried their audacity so far as to attack and pillage several walled towns in the British district of Ajmur, carrying off not only the entire plunder to their hill fastnesses, but numbers of the inhabitants also, holding them to ransom. At that period it fell to the duty of Lieut.-Col. Showers to take them in hand. He proceeded to Jehazpoor, the centre of the disturbed district, and inaugurated certain measures for the tranquillisation and reclamation of the race. From time immemorial, Jehazpoor, in the State of Adeypoor, had been a notoriously disturbed district. A period of brief tranquillity was accorded to Jehazpoor during the early part of the present century by the appalling severity of the measures of the noted minister Lalim Sing, after Jehazpoor fell into the possession of Kotah in 1806. On the restitution of the district, however, to Meywar, in 1819, it soon relapsed into its former disturbed condition. Jehazpoor was, in truth, a position well chosen for the lawless occupation of professional marauders, being a strong, hilly, and jungly country, where the boundaries of four jurisdictions meet, viz.—Meywar, Boondee, Jeypoor, and Ajmur. There are twelve tribes of Meenas in Central India, but the one under notice is called the Purihars, who were the dominant race in Marwur, till dispossessed of their ancient capital Mundore by the Rhatees towards the close of the fourteenth century. In a generation or two afterwards they are found in the Chronicles lurking on the quadruple boundary already alluded to, a race of outcasts without a common head; and such they have continued ever since, "their hand against every man, and every man's hand against them," plundering in gangs and joining any of the great marauding movements that have from time to time been organised under noted leaders. Thus in 1847, some of the boldest of the outlawed Thakur Javahir Singh's followers were these Meenas. The same indomitable spirit which carried the Purihars forth out of the land of their lost dominion seems to have maintained them in a state of wild independence throughout the long interval since; for though nominally owing allegiance to the States upon the verge of whose territories it has suited their purpose to locate themselves in *fallahs* or gangs, they have never really succumbed to any power, but, hanging together as one man, have always united to repel the frequent futile attempts that have been made from time to time by the rulers of States to coerce any of their Meena subjects, so-called. The aggregate of male adults in the tribe is about 24,000; of this number about 10,000, distributed in 200 villages, are located along these border tracts. Individually the men are brave to desperation, athletic and hardy, many of them tall with fine countenances, denoting their superior origin. The Meena will neither eat, smoke, nor intermarry with the aboriginal Buhl, Mair, Kole, or low-caste Meena of the Aravulla; that is to say, he will not give a daughter in marriage, though he will take to his bed as many daughters of inferior tribes as he can support. Their pride of birth is indeed excessive, fostered by traditions ascending beyond the bounds of history to the regions of myth. The genealogist of the tribe is the honoured guest in every village he visits in his annual round. Each family engages his company for one entire day, which is occupied in recording in the ponderous MS. volume the recent additions to the family tree, whether in the male or female branch; for even the ancestry of the women is duly recorded. About half the tribe are armed with matchlocks of a superior manufacture, about half with the bow, and all with the kattar, or double-hilted dagger, which is a weapon they peculiarly affect. It is a weapon never detached from the person a moment, waking or sleeping. Free from the ordinary prejudices of caste, the Purihars are great eaters of meat, which their cattle-lifting raids furnish in profusion. They are also great drinkers of spirits, which serve to increase their natural ferocity. All are married, and many besides take in keeping the widows of their deceased clansmen to the number of two or three each, or otherwise forcibly domicile women abducted in their raids. Perhaps the most noteworthy fact relating to the tribe was their ignorance, up to the day of Lieut-Col. Showers' arrival among them, of the true character of the British Government as the paramount power.

© 1870 Nature Publishing Group

The raids of the Meenas into British territory brought matters to a crisis, and it became necessary to put them down. But in contrast with the unfortunate contests with savage races, which are going on at the present day in other parts of the world, it may not be unworthy of note that the tranquillisation of Jehazpoor was effected without a shot being fired.

CRYSTALLOGRAPHY

Crystals of Potassic Racemate



ACCORDING to De la Provostaye, potassic racemate crystallises in the rhombic system; but M. des Cloiseaux, in a communication to the Annales de Chimie (xvii. 365), disputes the truth of that statement. All the crystals with which he worked (some being presented to him by Pasteur, some by Lamy and Gernez), are really derived from an oblique rhomboidal prism of 96° 56′. The base of this prism is always highly developed, and its inclined diagonal makes an angle of 92° 28′ with the anterior vertical edge. The plane of the optic axes is perpendicular to the plane of symmetry; the acute bisectrix is negative and normal to g'. The *revolving* dispersion is considerable, as shown by the distance which separates the plane where the red axes are situated from that containing the blue. It is easily found by the polarising microscope across fine sections, normal to the acute bisectrix. The *proper* dispersion of the axes is rather strong, with $\rho < v$. For their apparent distance in air (at 19)

$$2E = 130\ 2' \text{ (red rays)};\ 132\ 45' \text{ (blue rays)}.$$

ZOOLOGY

Development of Molgula Tubulosa

IT is well known that the larvæ of the Ascidians generally possess a form resembling, in external appearance at least, that of the tadpoles of our common Frogs, and also resembling these in the agility with which they swim about by means of their tail-like appendage. In fact, as M. Lacaze Duthiers indicates in a paper just communicated to the Academy of Sciences, this peculiarity of development has for a long time been regarded as characteristic of all the Ascidians. According to the celebrated naturalist just mentioned, *Molgula tubulosa* forms an exception to this general rule. Instead of exhibiting the brisk, jerking movements of the embryos of the *Phallusiæ* for example, the embryo of *Molgula* moves very slowly within its egg-capsule, its movements consisting chiefly of alterations in its general form which, however, finally effect the rupture of the capsule. Through this opening the embryo *flows*, like a plastic, amœboid mass, which remains quietly at the bottom of the vessel, merely changing its form slowly by amœboid movements. Soon after exclusion the embryo shows indications of zones in its body, and from the outermost of these processes are given off (for some time only five in number), which seem to fix it to surrounding objects and are analogous to the innumerable filaments of the tunic in the adult.

SCIENTIFIC SERIALS

THE May number of Silliman's *American Journal of Science and Arts* (vol. xlix. No. 147) opens with a paper by E. W. Blake, jun., on a method of producing, by the electric spark, figures similar to those of Lichtenberg. His method consists in throwing the discharge upon the surface of a fusible non-conducting body, of which common pitch, coating a plate of tin, seems to furnish the best results. Figures produced by means of friction and induction sparks are represented by woodcuts. Col. J. J. Woodward publishes an important paper on the application of the magnesium and electric lights to photomicrography, illustrated with figures showing the arrangement of the apparatus. An anonymous writer, using the initials J. H. B. L., describes and figures a new form of mechanical finger for the microscope. The chemical papers are as follows:—Combinations of silicon with alcoholic radicals, by C. Friedal and J. M. Crafts, a long and valuable paper; analyses of meteoric irons, and remarks on the alkalies contained in leucite, by J. Lawrence Smith the first part of a memoir by B. Silliman and H. Wurtz, on flame temperatures in their relations to composition and luminosity; on some double sulphates of the Cerium group, by C. H. Wing; on two peculiar products in the nickel manufacture, by Joseph Wharton; two short notes by O. Loew, on the action of sunlight on sulphurous acid, and on the formation of ozone by rapid combustion; and two notes on methods to be adopted in gas-analyses by Dr. Wolcott Gibbs. Prof. Arthur Wright notices some curious phenomena observed by him in connection with the discharge of an electrical machine. Natural History proper is represented in this number only by two papers, namely, an account, by H. Y. Hind, of the Laurentian and Huronian series in Nova Scotia and New Brunswick, and descriptions of some new corals, by A. E. Verrill. The latter consist of four Alcyonaria and three Madreporaria, one of which is described as forming a new genus. Besides the usual abstracts and extracted articles placed under the head of Scientific Intelligence, the editors publish an extract from a letter describing the movements produced by a strong gale of wind in the great iron dome of the Capitol of Washington. This is illustrated by a tracing of the pencil mark showing the course of the movement of the centre of the dome.

THE *Revue des Cours Scientifiques* for June 4 gives us M. Berthelot's lecture "on the isomeric states of simple bodies," in which he treats especially of the different states of oxygen, and concludes by observing that there exists, at least in certain cases, a relation between the states of a simple free body (element) and the nature of the combination from which it has been separated; that a simple body in a certain condition can enter more easily into one class of combination than into another class; and that a simple body can change its condition even while it exists in certain combinations. We find also a continuation of M. Bernard's lectures on "Suffocation by the fumes of charcoal," and an address by M. C. Robin, entitled, "How the parts of an organism adapt themselves to determinate purposes." The number for June 11 is mainly occupied by the description of a contrivance by means of which a locomotive can be made to act as a drag or arrester of motion in the train, when such is the will of the driver. We have also a report of Prof. Helmholtz's lecture before the Society of Natural and Medical Sciences at Heidelberg, on "the physiological action of electric currents of short duration in the interior of extensive conducting masses."

THE *Journal of Botany, British and Foreign*, for June hardly sustains the interest of the earlier numbers of the new series. The original articles are confined to a continuation of the Hon. J. L. Warren's paper on the British *Rubi*, and of Mr. Worthington Smith's *Clavis Agaricinorum*, and an article of considerable interest to geographical botanists and theorists on the origin of species, "On the World-Distribution of the British *Caryophyllaceæ*," by Mr. J. G. Baker. We have besides a biography (with portrait) of the late Dr. Franz Unger, and some extracts and shorter notes.

THE best article in the May number of the *American Entomologist and Botanist*, is one which is neither entomological nor botanical, "On the Gordius or Hair-worm," by Prof. Jos. Leidy, of Philadelphia, giving an account of the anatomical structure of the animal, its mode of propagation, and of the different species found in the United States. There are several other articles and an abundance of shorter notes, that will be of value to the young naturalist.

THE *Geological Magazine* for June commences with an article by Prof. Harkness, on "Elephant-remains in Ireland," which have now been met with in several localities. The writer mentions incidentally that Ireland has afforded hitherto no traces of either the hyæna or lion; the pleistocene carnivora were confined to the bear, of which, however, there are no historical records, and the wolf, which was finally extirpated about the year 1710. Prof. de Koninck contributes a paper "On some new and remarkable Echinoderms from the British Palæozoic rocks, including a species of *Palæchinus*; a new species and new genus, *Placocystites Forbesianus*, belonging to the family of *Cystideæ*; and a new species of *Haplocrinus*, *H. granatum*." Mr. T. G. Bonney, "On supposed *Pholas*-burrows in Derbyshire," believes these burrows to have been made by a *Helix*. Mr. J. W. Laidlay describes a "Prehistoric Dwelling and Kitchen-midden on the Coast of Haddingtonshire," in which were found a very large quantity of rude pottery in fragments, and, for the most part, roughly moulded by the hands; a number of implements of bone, such as needles, arrowheads, combs, knives, chisels, &c.,

© 1870 Nature Publishing Group